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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,733	01/22/2002	Andreas Jurisch	112740-353	6159

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EXAMINER

TSAI, CAROL S W

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 08/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/031,733

Applicant(s)

JURISCH ET AL.

Examiner

Carol S Tsai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6,7 and 10 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a) because the blank boxes shown should be labeled as to their function, for example: elements 1, 2, 5, 7, 9, and 12 in Fig. 1, as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 4,723,216 to Premierlani in view of U. S. Patent No. 5,165,051 to Kumar.

Premerlani discloses a method for determining an amplitude and phase angle of a measuring signal corresponding to a current or a voltage on an electrical power supply network by using sampled values of the measuring signal, the method comprising the steps of: using a model of the measuring signal containing a sinusoidal component in accordance with the relationship  $y = A \cdot \sin(2\pi ft + \phi)$ ,  $y$  designating an instantaneous value of the model of the

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measuring signal, A designating the amplitude, f designating the frequency,  $\phi$  designating the phase angle and t the time; and using both the model of the measuring signal and the sampled values, via an optimal mean square estimation method, to determine the model frequency parameter of the measuring signal by the estimation together with the model amplitude parameter and the model phase angle parameter (see col. 3, line 24 to col. 4, line 39).

Premarlani does not disclose a recursive nonlinear least-squares estimation method.

Kumar teaches a recursive nonlinear least-squares estimation method (see col. 11, lines 40-47).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Premarlani's method to include a recursive nonlinear least-squares estimation method, as taught by Kumar, in order to minimize the computational requirements (see col. 11, lines 46-47).

As to claim 10, Premarlani also discloses outputting result only when an estimation error being less than a smallest permitted estimation error (see col. 9, line 14 to col. 10, line 5).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Premarlani in view of Kumar as applied to claim 6 above, and further in view of U. S. Patent No. 4,645,881 to LeToumelin et al.

As noted above, Premarlani in combination with Kumar teach all the features of the claimed invention, but do not disclose a model for the measuring signal in accordance with the relationship  $y = A \cdot \sin(2\pi ft + \phi) + d$ . d modeling a DC component of the measuring signal.

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LeToumelin et al. teach a model for the measuring signal in accordance with the relationship  $y = A \cdot \sin(2\pi ft + \varphi) + d$ , d modeling a DC component of the measuring signal (see col. 4, line 30 to col. 5, line 37).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Premierlani in combination with Kumar's method to include a model for the measuring signal in accordance with the relationship  $y = A \cdot \sin(2\pi ft + \varphi) + d$ , d modeling a DC component of the measuring signal, as taught by LeToumelin et al., in order that a transition of the direct current component of an alternating signal can be detected (see col. 1, lines 16-18).

#### ***Allowable Subject Matter***

5. Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nasman discloses a phase detector which determines the phase based upon the output signals from a power coupler.

Winters et al. disclose a method for predicting fast fading using sinusoidal modeling techniques.

Fujimoto et al. disclose an adaptive communication apparatus for use in a multicarrier transmission system in which data sequence to be transmitted is divided into a plurality of data sequences, and these data sequences are converted into a high-frequency signal including a plurality of carriers allocated different frequencies and radio-transmitted in parallel.

Dobrica discloses a carrier synchronizing unit for a coherent detection data communication system over non-frequency selective fading channels wherein the redundancy in estimation of a fading channel multiplicative distortion is reduced to improve the reliability of the estimation and compensate for an influence of a tracking delay in recursive least square estimation.

Kumar discloses a method and system being provided for the transmission and reception of a varying reference signal together with a data-modulated signal in a communication system.

Nazarathy et al. disclose a generalized frequency dependent predistortion circuit for nonlinear optic devices such as semiconductor lasers and light emitting diodes including a pre-filter and post-filter associated with a linearizer (distorter).

Inkol discloses a method and apparatus for evaluating the similarity of multi-mode radar pulses detected by a passive ESM receiver.

Girgis discloses electrical signals suffer usually from distortion and noise.

### ***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. Tsai whose telephone number is (703) 305-0851. The examiner can normally be reached on Monday-Friday from 7:30 AM to 4:00 PM. If attempts to

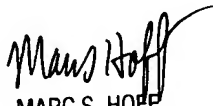
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reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703) 308-1677. The fax number for TC 2800 is (703) 308-7382. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (703) 308-1782.

In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 308-7382. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.

Carol S. Tsai

07/24/03

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
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